<110> Zimmerman, et al.

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<130> PP021603.0002

<140> To be assigned
<141> 2005-01-21

<150> US 60/537,985
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atc acc gag gag gtg tcg gag tac tgt agc cac atg att ggg agt gga   327
Ile Thr Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly
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cac ctg cag tct ctg cag cgg ctg att gac agt cag atg gag acc tcg   375
His Leu Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser
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tgc caa att aca ttt gag ttt gta gac cag gaa cag ttg aaa gat cca   423
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Asp Thr Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val
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Gln Leu Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp
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tat gaa gag cat gac aag gcc tgc gtc cga act ttc tat gag aca cct          615
Tyr Glu Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro
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agg cgg cgg agc cat caa gag cct cag aga gcg gat tct ccc ttg gag          903
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            225             230             235

caa cca gag ggc agc ccc ctg act cag gat gac aga cag gtg gaa ctg          951
Gln Pro Glu Gly Ser Pro Leu Thr Gln Asp Asp Arg Gln Val Glu Leu
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Pro Val
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Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu
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Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu
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Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln
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Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala
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      Glu Cys Ser Ser Gln Gly His Glu Arg Gln Ser Glu Gly Ser Ser Ser
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      Pro Gln Leu Gln Glu Ser Val Phe His Leu Leu Val Pro Ser Val Ile
              195             200             205


      Leu Val Leu Leu Ala Val Gly Gly Leu Leu Phe Tyr Arg Trp Arg Arg
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gctgcccgt atg acc gcg ccg ggc gcc gcc ggg cgc tgc cct ccc acg aca       231
          Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr
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tgg ctg ggc tcc ctg ctg ttg ttg gtc tgt ctc ctg gcg agc agg agt       279
Trp Leu Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser
15              20              25              30

atc acc gag gag gtg tcg gag tac tgt agc cac atg att ggg agt gga       327
Ile Thr Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly
            35              40              45

cac ctg cag tct ctg cag cgg ctg att gac agt cag atg gag acc tcg       375
His Leu Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser
            50              55              60
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tgc caa att aca ttt gag ttt gta gac cag gaa cag ttg aaa gat cca    423
Cys Gln Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro
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gtg tgc tac ctt aag aag gca ttt ctc ctg gta caa gac ata atg gag    471
Val Cys Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu
        80              85              90

gac acc atg cgc ttc aga gat aac acc ccc aat gcc atc gcc att gtg    519
Asp Thr Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val
95              100             105             110

cag ctg cag gaa ctc tct ttg agg ctg aag agc tgc ttc acc aag gat    567
Gln Leu Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp
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tat gaa gag cat gac aag gcc tgc gtc cga act ttc tat gag aca cct    615
Tyr Glu Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro
            130             135             140

ctc cag ttg ctg gag aag gtc aag aat gtc ttt aat gaa aca aag aat    663
Leu Gln Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn
            145             150             155

ctc ctt gac aag gac tgg aat att ttc agc aag aac tgc aac aac agc    711
Leu Leu Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser
        160             165             170

ttt gct gaa tgc tcc agc caa gat gtg gtg acc aag cct gat tgc aac    759
Phe Ala Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn
175             180             185             190

tgc ctg tac ccc aaa gcc atc cct agc agt gac ccg gcc tct gtc tcc    807
Cys Leu Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser
            195             200             205

cct cat cag ccc ctc gcc ccc tcc atg gcc cct gtg gct ggc ttg acc    855
Pro His Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr
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tgg gag gac tct gag gga act gag ggc agc tcc ctc ttg cct ggt gag    903
Trp Glu Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu
            225             230             235

cag ccc ctg cac aca gtg gat cca ggc agt gcc aag cag cgg cca ccc    951
Gln Pro Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro
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agg agc acc tgc cag agc ttt gag ccg cca gag acc cca gtt gtc aag    999
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255             260             265             270

gac agc acc atc ggt ggc tca cca cag cct cgc ccc tct gtc ggg gcc    1047
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aca gag ccc gcc aga ccc agc aac ttc ctc tca gca tct tct cca ctc        1239
Thr Glu Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu
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cct gca tca gca aag ggc caa cag ccg gca gat gta act ggt aca gcc        1287
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Thr Gly His Glu Arg Gln Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln
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gag tct gtc ttc cac ctg ctg gtg ccc agt gtc atc ctg gtc ttg ctg        1719
Glu Ser Val Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu
495             500             505             510

gcc gtc gga ggc ctc ttg ttc tac agg tgg agg cgg cgg agc cat caa        1767
Ala Val Gly Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln
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cccctccctg gccatcctcc tggaatgtgg tctgccctcc accagagctc ctgcctgcca       1984
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Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu
        35              40              45


Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
    50              55              60


Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys
65              70              75              80


Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr
                85              90              95


Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu
            100             105             110


Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu
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    Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
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    Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His
                195                 200                 205


    Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu
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                    245                 250                 255


    Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser
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    Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn
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    Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val
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    Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly
    305                 310                 315                 320


    Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu
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    Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala
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Gly Ser Pro Arg Ile Ser Ser Leu Arg Pro Gln Gly Leu Ser Asn Pro
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Ser Thr Leu Ser Ala Gln Pro Gln Leu Ser Arg Ser His Ser Ser Gly
            420             425             430        .

Ser Val Leu Pro Leu Gly Glu Leu Glu Gly Arg Arg Ser Thr Arg Asp
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Arg Arg Ser Pro Ala Glu Pro Glu Gly Gly Pro Ala Ser Glu Gly Ala
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Ala Arg Pro Leu Pro Arg Phe Asn Ser Val Pro Leu Thr Asp Thr Gly
465             470             475             480

His Glu Arg Gln Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser
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Val Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val
            500             505             510

Gly Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro
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cgcagcagcc agcgagcgag cgagcgagcg agggcggccg acgcgcccgg ccgggaccca   180

gctgcccgt atg acc gcg ccg ggc gcc gcc ggg cgc tgc cct ccc acg aca   231
         Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr
         1   5   10

tgg ctg ggc tcc ctg ctg ttg ttg gtc tgt ctc ctg gcg agc agg agt   279
Trp Leu Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser
15   20   25   30

atc acc gag gag gtg tcg gag tac tgt agc cac atg att ggg agt gga   327
Ile Thr Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly
                35   40   45

cac ctg cag tct ctg cag cgg ctg att gac agt cag atg gag acc tcg   375
His Leu Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser
            50   55   60

tgc caa att aca ttt gag ttt gta gac cag gaa cag ttg aaa gat cca   423
Cys Gln Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro
            65   70   75

gtg tgc tac ctt aag aag gca ttt ctc ctg gta caa gac ata atg gag   471
Val Cys Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu
        80   85   90

gac acc atg cgc ttc aga gat aac acc ccc aat gcc atc gcc att gtg   519
Asp Thr Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val
95   100   105   110

cag ctg cag gaa ctc tct ttg agg ctg aag agc tgc ttc acc aag gat   567
Gln Leu Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp
                115   120   125

tat gaa gag cat gac aag gcc tgc gtc cga act ttc tat gag aca cct   615
Tyr Glu Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro
            130   135   140

ctc cag ttg ctg gag aag gtc aag aat gtc ttt aat gaa aca aag aat   663
Leu Gln Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn
            145   150   155

ctc ctt gac aag gac tgg aat att ttc agc aag aac tgc aac aac agc   711
Leu Leu Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser
            160   165   170

ttt gct gaa tgc tcc agc caa gat gtg gtg acc aag cct gat tgc aac   759
Phe Ala Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn
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tgc ctg tac ccc aaa gcc atc cct agc agt gac ccg gcc tct gtc tcc   807
Cys Leu Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser
                195   200   205

cct cat cag ccc ctc gcc ccc tcc atg gcc cct gtg gct ggc ttg acc   855
Pro His Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr

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tgg gag gac tct gag gga act gag ggc agc tcc ctc ttg cct ggt gag        903
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        225                        230                        235

cag ccc ctg cac aca gtg gat cca ggc agt gcc aag cag cgg cca ccc        951
Gln Pro Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro
        240                        245                        250

agg agc acc tgc cag agc ttt gag ccg cca gag acc cca gtt gtc aag        999
Arg Ser Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys
255                        260                        265                        270

gac agc acc atc ggt ggc tca cca cag cct cgc ccc tct gtc ggg gcc       1047
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Trp Val Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro
                305                        310                        315

caa ggg aca gag ctt tcc ccc tcc agg cca gga ggg ggc agc atg cag       1191
Gln Gly Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln
        320                        325                        330

aca gag ccc gcc aga ccc agc aac ttc ctc tca gca tct tct cca ctc       1239
Thr Glu Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu
335                        340                        345                        350

cct gca tca gca aag ggc caa cag ccg gca gat gta act ggc cat gag       1287
Pro Ala Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly His Glu
                355                        360                        365

agg cag tcc gag gga tcc tcc agc ccg cag ctc cag gag tct gtc ttc       1335
Arg Gln Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser Val Phe
                370                        375                        380

cac ctg ctg gtg ccc agt gtc atc ctg gtc ttg ctg gcc gtc gga ggc       1383
His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val Gly Gly
                385                        390                        395

ctc ttg ttc tac agg tgg agg cgg cgg agc cat caa gag cct cag aga       1431
Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro Gln Arg
        400                        405                        410

gcg gat tct ccc ttg gag caa cca gag ggc agc ccc ctg act cag gat       1479
Ala Asp Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr Gln Asp
415                        420                        425                        430

gac aga cag gtg gaa ctg cca gtg tag agggaattct aag                    1519
Asp Arg Gln Val Glu Leu Pro Val
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1               5                   10                  15

Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr
            20                  25                  30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu
        35                  40                  45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
    50                  55                  60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys
65                  70                  75                  80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr
            85                  90                  95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu
            100                 105                 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu
        115                 120                 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln
    130                 135                 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu
145                 150                 155                 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala
            165                 170                 175

Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
            180                 185                 190

Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His
        195                 200                 205

Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu
    210                 215                 220

Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro
225                 230                 235                 240

Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser
```

                    245   250   255

Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser
            260   265   270

Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn
            275   280   285

Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val
    290   295   300

Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly
305   310   315   320

Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu
                325   330   335

Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala
            340   345   350

Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly His Glu Arg Gln
            355   360   365

Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser Val Phe His Leu
    370   375   380

Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val Gly Gly Leu Leu
385   390   395   400

Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro Gln Arg Ala Asp
                405   410   415

Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr Gln Asp Asp Arg
            420   425   430

Gln Val Glu Leu Pro Val
            435

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gagaagagga agaggaagag gaagagagga agcggaggga actgcggcca ggctaaaagg     120

ggaagaagag gatcagccca aggaggagga agaggaaaac aagacaaaca gccagtgcag     180

aggagaggaa cgtgtgtcca gtgtcccgat ccctgcggag ctagtagctg agagctctgt     240

gccctgggca ccttgcagcc ctgcacctgc ctgccacttc cccaccgagg cc atg ggc     298
                                                          Met Gly
                                                           1
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cca gga gtt ctg ctg ctc ctg ctg gtg gcc aca gct tgg cat ggt cag     346
Pro Gly Val Leu Leu Leu Leu Leu Val Ala Thr Ala Trp His Gly Gln
         5                   10                  15

gga atc cca gtg ata gag ccc agt gtc cct gag ctg gtc gtg aag cca     394
Gly Ile Pro Val Ile Glu Pro Ser Val Pro Glu Leu Val Val Lys Pro
    20                  25                  30

gga gca acg gtg acc ttg cga tgt gtg ggc aat ggc agc gtg gaa tgg     442
Gly Ala Thr Val Thr Leu Arg Cys Val Gly Asn Gly Ser Val Glu Trp
35                  40                  45                  50

gat ggc ccc cca tca cct cac tgg acc ctg tac tct gat ggc tcc agc     490
Asp Gly Pro Pro Ser Pro His Trp Thr Leu Tyr Ser Asp Gly Ser Ser
                55                  60                  65

agc atc ctc agc acc aac aac gct acc ttc caa aac acg ggg acc tat     538
Ser Ile Leu Ser Thr Asn Asn Ala Thr Phe Gln Asn Thr Gly Thr Tyr
                70                  75                  80

cgc tgc act gag cct gga gac ccc ctg gga ggc agc gcc gcc atc cac     586
Arg Cys Thr Glu Pro Gly Asp Pro Leu Gly Gly Ser Ala Ala Ile His
            85                  90                  95

ctc tat gtc aaa gac cct gcc cgg ccc tgg aac gtg cta gca cag gag     634
Leu Tyr Val Lys Asp Pro Ala Arg Pro Trp Asn Val Leu Ala Gln Glu
        100                 105                 110

gtg gtc gtg ttc gag gac cag gac gca cta ctg ccc tgt ctg ctc aca     682
Val Val Val Phe Glu Asp Gln Asp Ala Leu Leu Pro Cys Leu Leu Thr
115                 120                 125                 130
```

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gac ccg gtg ctg gaa gca ggc gtc tcg ctg gtg cgt gtg cgt ggc cgg        730
Asp Pro Val Leu Glu Ala Gly Val Ser Leu Val Arg Val Arg Gly Arg
            135                 140                 145

ccc ctc atg cgc cac acc aac tac tcc ttc tcg ccc tgg cat ggc ttc        778
Pro Leu Met Arg His Thr Asn Tyr Ser Phe Ser Pro Trp His Gly Phe
            150                 155                 160

acc atc cac agg gcc aag ttc att cag agc cag gac tat caa tgc agt        826
Thr Ile His Arg Ala Lys Phe Ile Gln Ser Gln Asp Tyr Gln Cys Ser
            165                 170                 175

gcc ctg atg ggt ggc agg aag gtg atg tcc atc agc atc cgg ctg aaa        874
Ala Leu Met Gly Gly Arg Lys Val Met Ser Ile Ser Ile Arg Leu Lys
        180                 185                 190

gtg cag aaa gtc atc cca ggg ccc cca gcc ttg aca ctg gtg cct gca        922
Val Gln Lys Val Ile Pro Gly Pro Pro Ala Leu Thr Leu Val Pro Ala
195                 200                 205                 210

gag ctg gtg cgg att cga ggg gag gct gcc cag atc gtg tgc tca gcc        970
Glu Leu Val Arg Ile Arg Gly Glu Ala Ala Gln Ile Val Cys Ser Ala
            215                 220                 225

agc agc gtt gat gtt aac ttt gat gtc ttc ctc caa cac aac aac acc       1018
Ser Ser Val Asp Val Asn Phe Asp Val Phe Leu Gln His Asn Asn Thr
            230                 235                 240

aag ctc gca atc cct caa·caa tct gac ttt cat aat aac cgt tac caa       1066
Lys Leu Ala Ile Pro Gln Gln Ser Asp Phe His Asn Asn Arg Tyr Gln
        245                 250                 255

aaa gtc ctg acc ctc aac ctc gat caa gta gat ttc caa cat gcc ggc       1114
Lys Val Leu Thr Leu Asn Leu Asp Gln Val Asp Phe Gln His Ala Gly
        260                 265                 270

aac tac tcc tgc gtg gcc agc aac gtg cag ggc aag cac tcc acc tcc       1162
Asn Tyr Ser Cys Val Ala Ser Asn Val Gln Gly Lys His Ser Thr Ser
275                 280                 285                 290

atg ttc ttc cgg gtg gta gag agt gcc tac ttg aac ttg agc tct gag       1210
Met Phe Phe Arg Val Val Glu Ser Ala Tyr Leu Asn Leu Ser Ser Glu
            295                 300                 305

cag aac ctc atc cag gag gtg acc gtg ggg gag ggg ctc aac ctc aaa       1258
Gln Asn Leu Ile Gln Glu Val Thr Val Gly Glu Gly Leu Asn Leu Lys
            310                 315                 320

gtc atg gtg gag gcc tac cca ggc ctg caa ggt ttt aac tgg acc tac       1306
Val Met Val Glu Ala Tyr Pro Gly Leu Gln Gly Phe Asn Trp Thr Tyr
        325                 330                 335

ctg gga ccc ttt tct gac cac cag cct gag ccc aag ctt gct aat gct       1354
Leu Gly Pro Phe Ser Asp His Gln Pro Glu Pro Lys Leu Ala Asn Ala
        340                 345                 350

acc acc aag gac aca tac agg cac acc ttc acc ctc tct ctg ccc cgc       1402
Thr Thr Lys Asp Thr Tyr Arg His Thr Phe Thr Leu Ser Leu Pro Arg
355                 360                 365                 370

ctg aag ccc tct gag gct ggc cgc tac tcc ttc ctg gcc aga aac cca       1450
Leu Lys Pro Ser Glu Ala Gly Arg Tyr Ser Phe Leu Ala Arg Asn Pro
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                              375   380   385

gga ggc tgg aga gct ctg acg ttt gag ctc acc ctt cga tac ccc cca   1498
Gly Gly Trp Arg Ala Leu Thr Phe Glu Leu Thr Leu Arg Tyr Pro Pro
            390   395   400

gag gta agc gtc ata tgg aca ttc atc aac ggc tct ggc acc ctt ttg   1546
Glu Val Ser Val Ile Trp Thr Phe Ile Asn Gly Ser Gly Thr Leu Leu
            405   410   415

tgt gct gcc tct ggg tac ccc cag ccc aac gtg aca tgg ctg cag tgc   1594
Cys Ala Ala Ser Gly Tyr Pro Gln Pro Asn Val Thr Trp Leu Gln Cys
        420   425   430

agt ggc cac act gat agg tgt gat gag gcc caa gtg ctg cag gtc tgg   1642
Ser Gly His Thr Asp Arg Cys Asp Glu Ala Gln Val Leu Gln Val Trp
435   440   445   450

gat gac cca tac cct gag gtc ctg agc cag gag ccc ttc cac aag gtg   1690
Asp Asp Pro Tyr Pro Glu Val Leu Ser Gln Glu Pro Phe His Lys Val
                455   460   465

acg gtg cag agc ctg ctg act gtt gag acc tta gag cac aac caa acc   1738
Thr Val Gln Ser Leu Leu Thr Val Glu Thr Leu Glu His Asn Gln Thr
            470   475   480

tac gag tgc agg gcc cac aac agc gtg ggg agt ggc tcc tgg gcc ttc   1786
Tyr Glu Cys Arg Ala His Asn Ser Val Gly Ser Gly Ser Trp Ala Phe
        485   490   495

ata ccc atc tct gca gga gcc cac acg cat ccc ccg gat gag ttc ctc   1834
Ile Pro Ile Ser Ala Gly Ala His Thr His Pro Pro Asp Glu Phe Leu
        500   505   510

ttc aca cca gtg gtg gtc gcc tgc atg tcc atc atg gcc ttg ctg ctg   1882
Phe Thr Pro Val Val Val Ala Cys Met Ser Ile Met Ala Leu Leu Leu
515   520   525   530

ctg ctg ctc ctg ctg cta ttg tac aag tat aag cag aag ccc aag tac   1930
Leu Leu Leu Leu Leu Leu Leu Tyr Lys Tyr Lys Gln Lys Pro Lys Tyr
                535   540   545

cag gtc cgc tgg aag atc atc gag agc tat gag ggc aac agt tat act   1978
Gln Val Arg Trp Lys Ile Ile Glu Ser Tyr Glu Gly Asn Ser Tyr Thr
            550   555   560

ttc atc gac ccc acg cag ctg cct tac aac gag aag tgg gag ttc ccc   2026
Phe Ile Asp Pro Thr Gln Leu Pro Tyr Asn Glu Lys Trp Glu Phe Pro
            565   570   575

cgg aac aac ctg cag ttt ggt aag acc ctc gga gct gga gcc ttt ggg   2074
Arg Asn Asn Leu Gln Phe Gly Lys Thr Leu Gly Ala Gly Ala Phe Gly
        580   585   590

aag gtg gtg gag gcc acg gcc ttt ggt ctg ggc aag gag gat gct gtc   2122
Lys Val Val Glu Ala Thr Ala Phe Gly Leu Gly Lys Glu Asp Ala Val
595   600   605   610

ctg aag gtg gct gtg aag atg ctg aag tcc acg gcc cat gct gat gag   2170
Leu Lys Val Ala Val Lys Met Leu Lys Ser Thr Ala His Ala Asp Glu
                615   620   625

aag gag gcc ctc atg tcc gag ctg aag atc atg agc cac ctg ggc cag   2218

                              - 16 -

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          Lys Glu Ala Leu Met Ser Glu Leu Lys Ile Met Ser His Leu Gly Gln
                      630                 635                 640

cac gag aac atc gtc aac ctt ctg gga gcc tgt acc cat gga ggc cct        2266
His Glu Asn Ile Val Asn Leu Leu Gly Ala Cys Thr His Gly Gly Pro
            645                 650                 655

gta ctg gtc atc acg gag tac tgt tgc tat ggc gac ctg ctc aac ttt        2314
Val Leu Val Ile Thr Glu Tyr Cys Cys Tyr Gly Asp Leu Leu Asn Phe
        660                 665                 670

ctg cga agg aag gct gag gcc atg ctg gga ccc agc ctg agc ccc ggc        2362
Leu Arg Arg Lys Ala Glu Ala Met Leu Gly Pro Ser Leu Ser Pro Gly
675                 680                 685                 690

cag gac ccc gag gga ggc gtc gac tat aag aac atc cac ctc gag aag        2410
Gln Asp Pro Glu Gly Gly Val Asp Tyr Lys Asn Ile His Leu Glu Lys
                695                 700                 705

aaa tat gtc cgc agg gac agt ggc ttc tcc agc cag ggt gtg gac acc        2458
Lys Tyr Val Arg Arg Asp Ser Gly Phe Ser Ser Gln Gly Val Asp Thr
            710                 715                 720

tat gtg gag atg agg cct gtc tcc act tct tca aat gac tcc ttc tct        2506
Tyr Val Glu Met Arg Pro Val Ser Thr Ser Ser Asn Asp Ser Phe Ser
        725                 730                 735

gag caa gac ctg gac aag gag gat gga cgg ccc ctg gag ctc cgg gac        2554
Glu Gln Asp Leu Asp Lys Glu Asp Gly Arg Pro Leu Glu Leu Arg Asp
        740                 745                 750

ctg ctt cac ttc tcc agc caa gta gcc cag ggc atg gcc ttc ctc gct        2602
Leu Leu His Phe Ser Ser Gln Val Ala Gln Gly Met Ala Phe Leu Ala
755                 760                 765                 770

tcc aag aat tgc atc cac cgg gac gtg gca gcg cgt aac gtg ctg ttg        2650
Ser Lys Asn Cys Ile His Arg Asp Val Ala Ala Arg Asn Val Leu Leu
                775                 780                 785

acc aat ggt cat gtg gcc aag att ggg gac ttc ggg ctg gct agg gac        2698
Thr Asn Gly His Val Ala Lys Ile Gly Asp Phe Gly Leu Ala Arg Asp
                790                 795                 800

atc atg aat gac tcc aac tac att gtc aag ggc aat gcc cgc ctg cct        2746
Ile Met Asn Asp Ser Asn Tyr Ile Val Lys Gly Asn Ala Arg Leu Pro
            805                 810                 815

gtg aag tgg atg gcc cca gag agc atc ttt gac tgt gtc tac acg gtt        2794
Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asp Cys Val Tyr Thr Val
        820                 825                 830

cag agc gac gtc tgg tcc tat ggc atc ctc ctc tgg gag atc ttc tca        2842
Gln Ser Asp Val Trp Ser Tyr Gly Ile Leu Leu Trp Glu Ile Phe Ser
835                 840                 845                 850

ctt ggg ctg aat ccc tac cct ggc atc ctg gtg aac agc aag ttc tat        2890
Leu Gly Leu Asn Pro Tyr Pro Gly Ile Leu Val Asn Ser Lys Phe Tyr
                855                 860                 865

aaa ctg gtg aag gat gga tac caa atg gcc cag cct gca ttt gcc cca        2938
Lys Leu Val Lys Asp Gly Tyr Gln Met Ala Gln Pro Ala Phe Ala Pro
            870                 875                 880
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aag aat ata tac agc atc atg cag gcc tgc tgg gcc ttg gag ccc acc      2986
Lys Asn Ile Tyr Ser Ile Met Gln Ala Cys Trp Ala Leu Glu Pro Thr
        885             890                 895

cac aga ccc acc ttc cag cag atc tgc tcc ttc ctt cag gag cag gcc      3034
His Arg Pro Thr Phe Gln Gln Ile Cys Ser Phe Leu Gln Glu Gln Ala
    900             905                 910

caa gag gac agg aga gag cgg gac tat acc aat ctg ccg agc agc agc      3082
Gln Glu Asp Arg Arg Glu Arg Asp Tyr Thr Asn Leu Pro Ser Ser Ser
915             920                 925                 930

aga agc ggt ggc agc ggc agc agc agc agt gag ctg gag gag gag agc      3130
Arg Ser Gly Gly Ser Gly Ser Ser Ser Ser Glu Leu Glu Glu Glu Ser
            935                 940                 945

tct agt gag cac ctg acc tgc tgc gag caa ggg gat atc gcc cag ccc      3178
Ser Ser Glu His Leu Thr Cys Cys Glu Gln Gly Asp Ile Ala Gln Pro
            950                 955                 960

ttg ctg cag ccc aac aac tat cag ttc tgc tga ggagttgacg acagggagta   3231
Leu Leu Gln Pro Asn Asn Tyr Gln Phe Cys
            965                 970
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ccactctccc ctcctccaaa cttcaactcc tccatggatg gggcgacacg gggagaacat   3291

acaaactctg ccttcggtca tttcactcaa cagctcggcc cagctctgaa acttgggaag   3351

gtgagggatt caggggaggt cagaggatcc cacttcctga gcatgggcca tcactgccag   3411

tcaggggctg ggggctgagc cctcacccc ccctccccta ctgttctcat ggtgttggcc    3471

tcgtgtttgc tatgccaact agtagaacct tctttcctaa tcccttatc ttcatggaaa    3531

tggactgact ttatgcctat gaagtcccca ggagctacac tgatactgag aaaaccaggc   3591

tctttggggc tagacagact ggcagagagt gagatctccc tctctgagag gagcagcaga   ·3651

tgctcacaga ccacactcag ctcaggcccc ttggagcagg atggctcctc taagaatctc   3711

acaggacctc ttagtctctg ccctatacgc cgccttcact ccacagcctc accctccca    3771

cccccatact ggtactgctg taatgagcca agtggcagct aaaagttggg ggtgttctgc   3831

ccagtcccgt cattctgggc tagaaggcag gggaccttgg catgtggctg gccacaccaa   3891

gcaggaagca caaactcccc caagctgact catcctaact aacagtcacg ccgtgggatg   3951

tctctgtcca cattaaacta acagcattaa tgca                               3985
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<213>  Homo sapiens

<400>  8

Met Gly Pro Gly Val Leu Leu Leu Leu Val Ala Thr Ala Trp His His
1               5                   10                  15


Gly Gln Gly Ile Pro Val Ile Glu Pro Ser Val Pro Glu Leu Val Val
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                    20                      25                      30

        Lys Pro Gly Ala Thr Val Thr Leu Arg Cys Val Gly Asn Gly Ser Val
                35                  40                  45


        Glu Trp Asp Gly Pro Pro Ser Pro His Trp Thr Leu Tyr Ser Asp Gly
            50                  55                  60


        Ser Ser Ser Ile Leu Ser Thr Asn Asn Ala Thr Phe Gln Asn Thr Gly
        65                  70                  75                  80


        Thr Tyr Arg Cys Thr Glu Pro Gly Asp Pro Leu Gly Gly Ser Ala Ala
                        85                  90                  95


        Ile His Leu Tyr Val Lys Asp Pro Ala Arg Pro Trp Asn Val Leu Ala
                    100                 105                 110


        Gln Glu Val Val Val Phe Glu Asp Gln Asp Ala Leu Leu Pro Cys Leu
                115                 120                 125


        Leu Thr Asp Pro Val Leu Glu Ala Gly Val Ser Leu Val Arg Val Arg
            130                 135                 140


        Gly Arg Pro Leu Met Arg His Thr Asn Tyr Ser Phe Ser Pro Trp His
        145                 150                 155                 160


        Gly Phe Thr Ile His Arg Ala Lys Phe Ile Gln Ser Gln Asp Tyr Gln
                        165                 170                 175


        Cys Ser Ala Leu Met Gly Gly Arg Lys Val Met Ser Ile Ser Ile Arg
                    180                 185                 190


        Leu Lys Val Gln Lys Val Ile Pro Gly Pro Pro Ala Leu Thr Leu Val
                    195                 200                 205


        Pro Ala Glu Leu Val Arg Ile Arg Gly Glu Ala Ala Gln Ile Val Cys
            210                 215                 220


        Ser Ala Ser Ser Val Asp Val Asn Phe Asp Val Phe Leu Gln His Asn
        225                 230                 235                 240


        Asn Thr Lys Leu Ala Ile Pro Gln Gln Ser Asp Phe His Asn Asn Arg
                        245                 250                 255


        Tyr Gln Lys Val Leu Thr Leu Asn Leu Asp Gln Val Asp Phe Gln His
                    260                 265                 270
```

Ala Gly Asn Tyr Ser Cys Val Ala Ser Asn Val Gln Gly Lys His Ser
      275   280   285

Thr Ser Met Phe Phe Arg Val Val Glu Ser Ala Tyr Leu Asn Leu Ser
   290   295   300

Ser Glu Gln Asn Leu Ile Gln Glu Val Thr Val Gly Glu Gly Leu Asn
305   310   315   320

Leu Lys Val Met Val Glu Ala Tyr Pro Gly Leu Gln Gly Phe Asn Trp
          325   330   335

Thr Tyr Leu Gly Pro Phe Ser Asp His Gln Pro Glu Pro Lys Leu Ala
        340   345   350

Asn Ala Thr Thr Lys Asp Thr Tyr Arg His Thr Phe Thr Leu Ser Leu
      355   360   365

Pro Arg Leu Lys Pro Ser Glu Ala Gly Arg Tyr Ser Phe Leu Ala Arg
   370   375   380

Asn Pro Gly Gly Trp Arg Ala Leu Thr Phe Glu Leu Thr Leu Arg Tyr
385   390   395   400

Pro Pro Glu Val Ser Val Ile Trp Thr Phe Ile Asn Gly Ser Gly Thr
        405   410   415

Leu Leu Cys Ala Ala Ser Gly Tyr Pro Gln Pro Asn Val Thr Trp Leu
        420   425   430

Gln Cys Ser Gly His Thr Asp Arg Cys Asp Glu Ala Gln Val Leu Gln
      435   440   445

Val Trp Asp Asp Pro Tyr Pro Glu Val Leu Ser Gln Glu Pro Phe His
   450   455   460

Lys Val Thr Val Gln Ser Leu Leu Thr Val Glu Thr Leu Glu His Asn
465   470   475   480

Gln Thr Tyr Glu Cys Arg Ala His Asn Ser Val Gly Ser Gly Ser Trp
        485   490   495

Ala Phe Ile Pro Ile Ser Ala Gly Ala His Thr His Pro Pro Asp Glu
        500   505   510

Phe Leu Phe Thr Pro Val Val Val Ala Cys Met Ser Ile Met Ala Leu
        515   520   525

Leu Leu Leu Leu Leu Leu Leu Leu Leu Tyr Lys Tyr Lys Gln Lys Pro
    530   535   540

Lys Tyr Gln Val Arg Trp Lys Ile Ile Glu Ser Tyr Glu Gly Asn Ser
545   550   555   560

Tyr Thr Phe Ile Asp Pro Thr Gln Leu Pro Tyr Asn Glu Lys Trp Glu
                565   570   575

Phe Pro Arg Asn Asn Leu Gln Phe Gly Lys Thr Leu Gly Ala Gly Ala
            580   585   590

Phe Gly Lys Val Val Glu Ala Thr Ala Phe Gly Leu Gly Lys Glu Asp
        595   600   605

Ala Val Leu Lys Val Ala Val Lys Met Leu Lys Ser Thr Ala His Ala
    610   615   620

Asp Glu Lys Glu Ala Leu Met Ser Glu Leu Lys Ile Met Ser His Leu
625   630   635   640

Gly Gln His Glu Asn Ile Val Asn Leu Leu Gly Ala Cys Thr His Gly
                645   650   655

Gly Pro Val Leu Val Ile Thr Glu Tyr Cys Cys Tyr Gly Asp Leu Leu
            660   665   670

Asn Phe Leu Arg Arg Lys Ala Glu Ala Met Leu Gly Pro Ser Leu Ser
            675   680   685

Pro Gly Gln Asp Pro Glu Gly Gly Val Asp Tyr Lys Asn Ile His Leu
    690   695   700

Glu Lys Lys Tyr Val Arg Arg Asp Ser Gly Phe Ser Ser Gln Gly Val
705   710   715   720

Asp Thr Tyr Val Glu Met Arg Pro Val Ser Thr Ser Ser Asn Asp Ser
            725   730   735

Phe Ser Glu Gln Asp Leu Asp Lys Glu Asp Gly Arg Pro Leu Glu Leu
            740   745   750

Arg Asp Leu Leu His Phe Ser Ser Gln Val Ala Gln Gly Met Ala Phe
        755   760   765

Leu Ala Ser Lys Asn Cys Ile His Arg Asp Val Ala Ala Arg Asn Val
    770   775   780

```
Leu Leu Thr Asn Gly His Val Ala Lys Ile Gly Asp Phe Gly Leu Ala
785             790             795             800

Arg Asp Ile Met Asn Asp Ser Asn Tyr Ile Val Lys Gly Asn Ala Arg
            805             810             815

Leu Pro Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asp Cys Val Tyr
        820             825             830

Thr Val Gln Ser Asp Val Trp Ser Tyr Gly Ile Leu Leu Trp Glu Ile
        835             840             845

Phe Ser Leu Gly Leu Asn Pro Tyr Pro Gly Ile Leu Val Asn Ser Lys
    850             855             860

Phe Tyr Lys Leu Val Lys Asp Gly Tyr Gln Met Ala Gln Pro Ala Phe
865             870             875             880

Ala Pro Lys Asn Ile Tyr Ser Ile Met Gln Ala Cys Trp Ala Leu Glu
            885             890             895

Pro Thr His Arg Pro Thr Phe Gln Gln Ile Cys Ser Phe Leu Gln Glu
            900             905             910

Gln Ala Gln Glu Asp Arg Arg Glu Arg Asp Tyr Thr Asn Leu Pro Ser
        915             920             925

Ser Ser Arg Ser Gly Gly Ser Gly Ser Ser Ser Ser Glu Leu Glu Glu
        930             935             940

Glu Ser Ser Ser Glu His Leu Thr Cys Cys Glu Gln Gly Asp Ile Ala
945             950             955             960

Gln Pro Leu Leu Gln Pro Asn Asn Tyr Gln Phe Cys
            965             970
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